

**Math 6 - Unit 2: Ratios, Rates, Proportions**

End of Unit Test - STUDY GUIDE

Name: Key

Class Period: 1 2 3 4 Date: \_\_\_\_\_

**Vocabulary** - Define the following terms:

- 1) ratio a comparison of 2 numbers
- 2) equivalent equal to
- 3) percent out of 100
- 4) proportion an equation of equivalent ratios (ex:  $\frac{5}{15} = \frac{3}{9}$ )

**Problem Solving. Show your work!**

- 5) The ratio of whale sharks to dolphins at the Georgia Aquarium is 1 to 2. Based on that information, what is the missing value in the table?

Whale Sharks	1	6	5	10
Dolphins	2	12	10	20

*Handwritten notes: An arrow from 1 to 6 is labeled 'x6'. An arrow from 2 to 12 is labeled 'x6'.*

- 6) 14 is 20% of what number?

$$x5 \swarrow \frac{20}{100} = \frac{14}{x} \searrow x5 \quad 14 \cdot 5 = 70$$

- 7) What is 60% of 400?

$$\frac{60}{100} \cdot 400 = 240$$

*Handwritten notes: An arrow from 60 to 240 is labeled 'x4'. An arrow from 100 to 400 is labeled 'x4'.*

- 8) Which value of x will make these ratios equivalent?  $\frac{12}{6} = \frac{x}{7}$   $\cdot 2$

14

- 9) Acayo paid \$48 for 8 tickets to the new Avengers movie. Write the ratio as a unit rate. (Divide.)

$$\begin{array}{r} 6 \\ 8 \overline{)48} \\ \underline{-48} \\ 0 \end{array}$$

\$6 per ticket

- 10) Jessica drove 288 miles in 4 hours. Oscar drove 189 miles in 3 hours. Who drove at the faster rate of speed? (Find their unit rates.)

$$288 \div 4 = 72$$

$$189 \div 3 = 63$$

Jessica drove 72mph and  
Oscar drove 63mph.  
Jessica was faster.

- 11) Bitey the snake is 3 feet long. Bubbles the fish is 48 inches long. How much longer is Bubbles than Bitey?  
 (1 foot = 12 inches)

$$\begin{aligned} \text{Bitey} &= 3\text{ft} = 36\text{in} \\ \text{Bubbles} &= 4\text{ft} = 48\text{in} \end{aligned}$$

Bubbles is 1 foot, or 12 inches, longer than Bitey.

- 12) The ratio of red to blue socks in a drawer is 8:12. If there are 80 red socks in the drawer, how many are blue?

$$\frac{\text{red}}{\text{blue}} = \frac{8}{12} = \frac{80}{120}$$

- 13) There are 80 people eating in a Chinese restaurant. 25% of these people ordered an eggroll. How many people ordered an eggroll?

$$\div 4 \left[ \frac{25}{100} = \frac{20}{80} \right] \div 4$$

- 14) Mariama went out to dinner with her friends and had great service. She wanted to leave a 20% tip. If the bill was \$39, how much tip will she leave (20% of 39)?

$$\div 5 \left[ \frac{20}{100} = \frac{x}{39} \right] \div 5$$

$$\begin{array}{r} 7.80 \\ 5 \overline{) 39.00} \\ \underline{-35 \phantom{00}} \\ 40 \phantom{0} \\ \underline{-40 \phantom{0}} \\ 0 \end{array}$$

\$7.80

- 15) The weight of an elephant is 13 kg. How many grams does the elephant weigh? (1 kg = 1000 g)

$$\frac{1\text{kg}}{1000\text{g}} = \frac{13\text{kg}}{x}$$

13,000

- 16) Seventy liters of soda were served at a party. How many kiloliters were served? (1000 L = 1 kL)

$$\frac{1000\text{L}}{1\text{kL}} = \frac{70\text{L}}{x}$$

$$\begin{array}{r} .07 \\ 1000 \overline{) 70.00} \\ \underline{-70 \phantom{00}} \\ 0 \end{array}$$

.07

- 17) If 1 Ton is equal to 2,000 pounds, how many Tons are equal to 17,000 pounds?

$$\begin{array}{l} \text{tons} \\ \hline \text{pounds} \end{array} \quad \begin{array}{c} \cancel{1} \\ \cancel{2000} \end{array} = \frac{\cancel{17000}}{\cancel{1000}} \quad \begin{array}{l} 2000x = 17,000 \\ x = 8.5 \end{array}$$